Introduction to data processing and image recognition using Python and TensorFlow

Workshop activity session 12
April/May 2021

Duration: 45 minutes

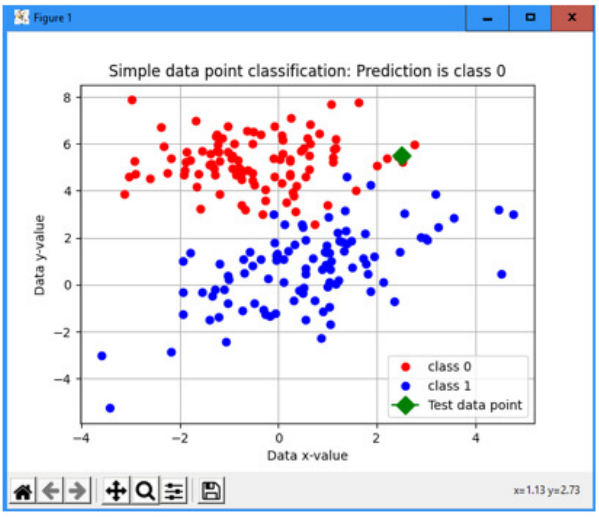
Activity session 12 overview

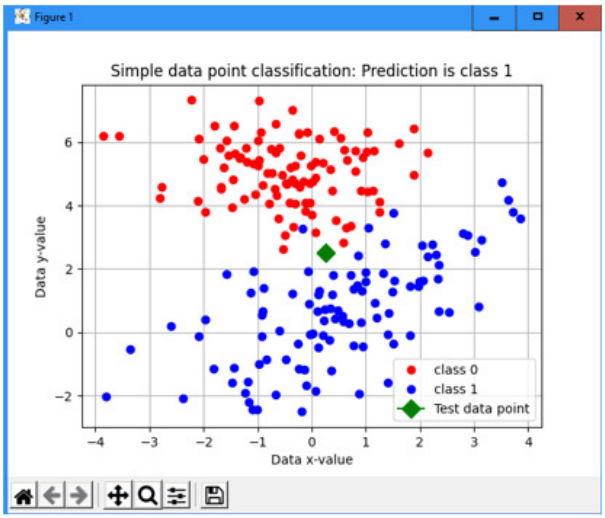
The aim of this session is to further investigate TensorFlow with Python in order to implement an approach for the kNN algorithm

Part 1: kNN algorithm

kNN (k nearest neighbours) is an algorithm widely used for classifying data. “k” is a non-zero integer number

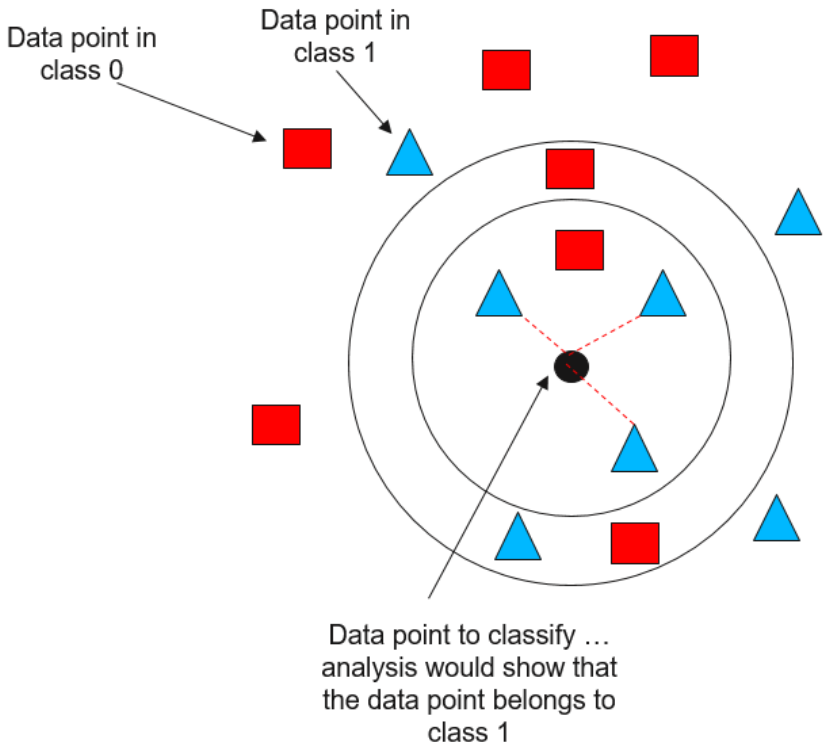
For example, two clusters and a data point to predict which cluster the data point belongs to.





It is a supervised learning approach in machine learning. Data points are provided in the training dataset in known classes used for model training. Classes may be separate or overlap. How many data points are provided in each class need careful consideration, and should be roughly equal to avoid any possible bias.

Consider widely Euclidian distance, but also Manhattan distance is used.



How about algorithm development in 1D, 2D or 3D, and ***n***D space?